



BECHTL01-06

Approved  
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9/4/03

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : ROBERT BUCKLES, ET AL )  
Serial No. : 09/814,286 )  
Filed : March 21, 2001 )  
For : SERIES TRANSMISSION )  
LINE TRANSFORMER )  
Examiner : To be Assigned )

Art Unit 2832

I hereby certify that this correspondence is being  
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July 2, 2001  
(Date)  
Traci Stanbrough

PROPOSED AMENDMENTS TO DRAWINGS

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir/Madam:

In response to a Notice to File Missing Parts and requirement to submit substitute drawings dated May 21, 2001, the applicant submits the following proposed amendments to the drawings and, anticipating approval and to advance prosecution, corrected informal drawings. Approval of the corrections is respectfully requested.

REMARKS

Applicant submits drawings marked in red to show the changes thereto incorporated into the corrected formal drawings submitted. The corrections are in the nature of removing textural matter from the drawings. Applicant submits that no new matter has been presented in the proposed amendments.

**Serial No.** : 09/814,286  
**Filed** : 21 March 2001

CONCLUSION

For the reasons advance above, it is requested that the proposed drawing amendments bee approved and the corrected informal drawings be accepted.

Respectfully submitted,

ANDERSON & MORISHITA, LLC

Dated: July 2, 2001

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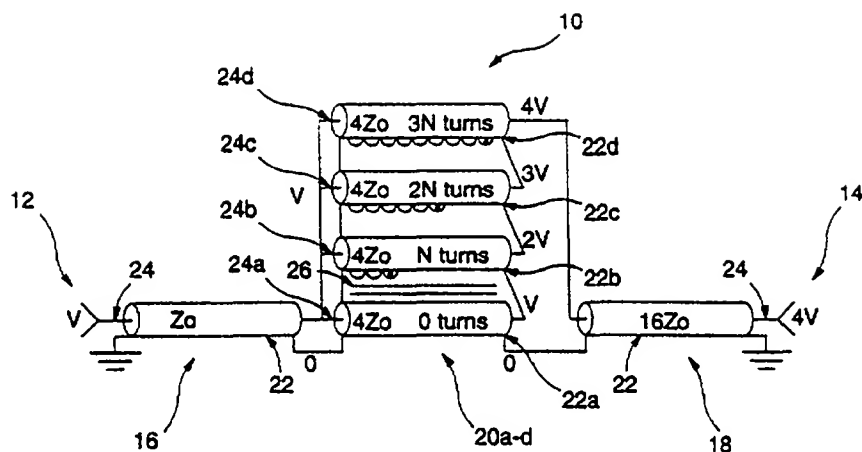


Figure 1. 16:1 TLT of the prior art, properly assembled.

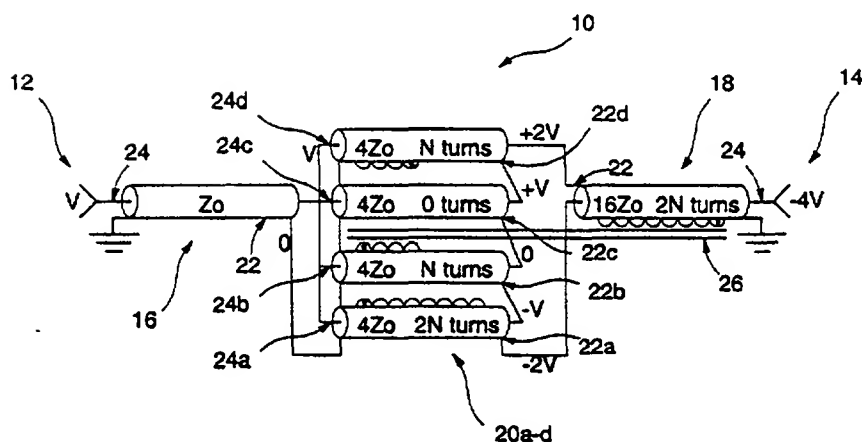


Figure 2. 16:1 Inverting Balanced TLT of prior art. Balancing the voltages positive and negative within the TLT reduces capacitive energy losses. This can be made non-inverting by simply reversing the connections and helicity of cable 18.

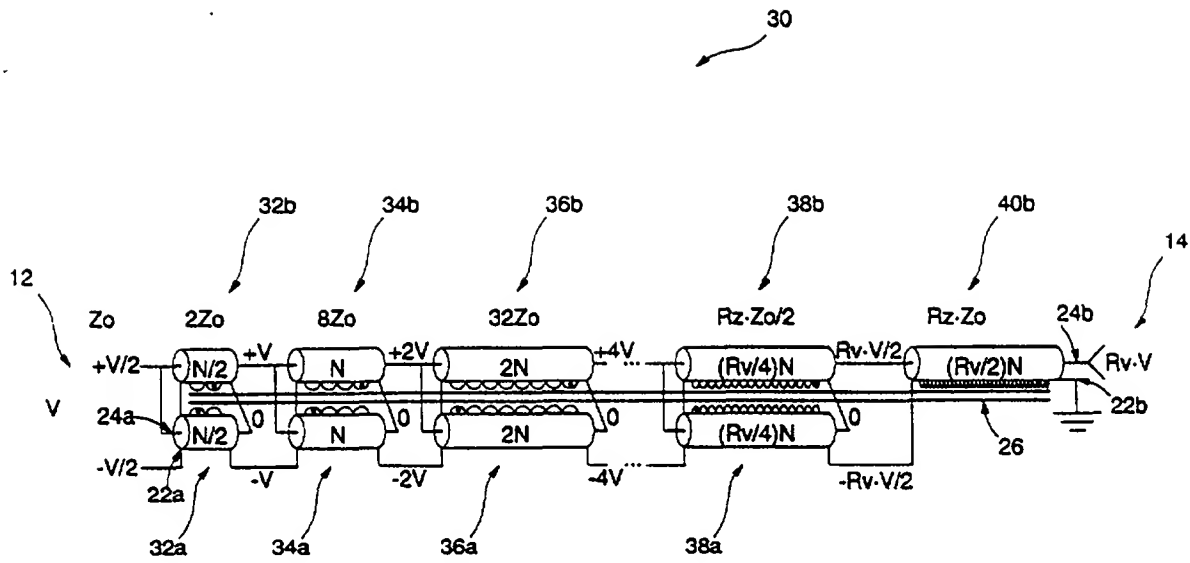


Figure 3. Generalized schematic of a non-inverting STLT.

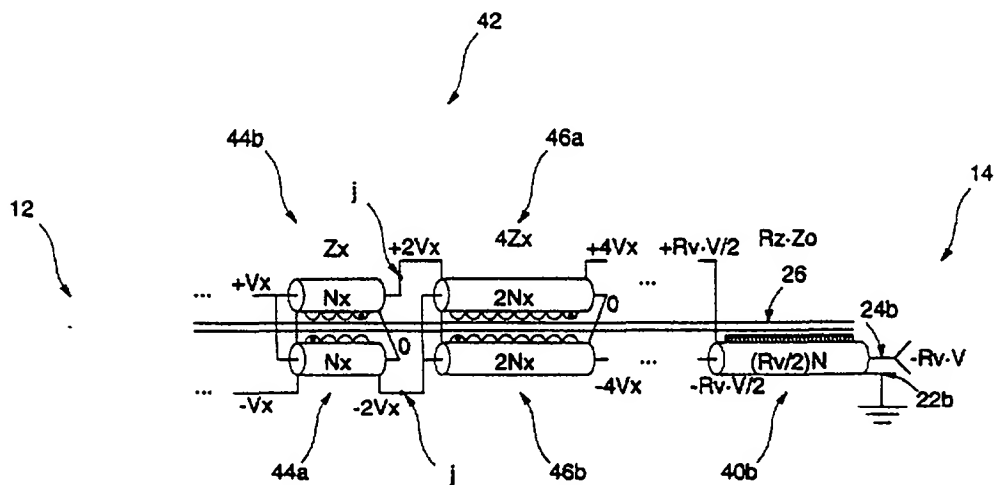


Figure 4. Method of inverting the STLT signal. The connections at a junction  $j$  between any sections can be reversed. To maintain consistent field polarity, the entire remaining portion of the STLT is simply flipped around to opposite legs of the core. The STLT is literally inverted.

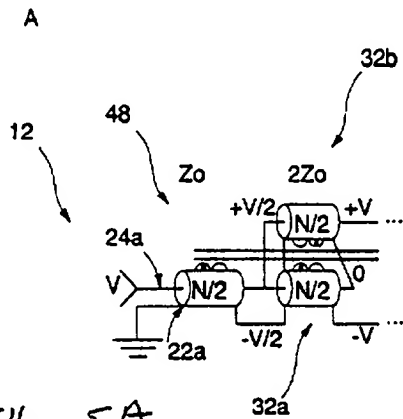


FIG. 5A

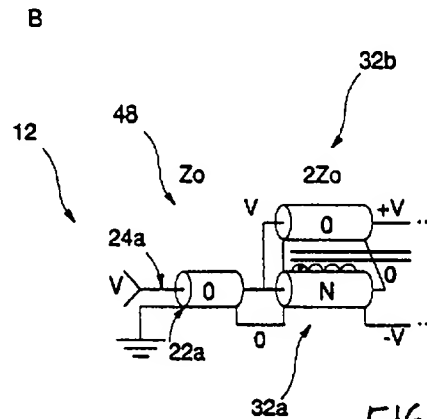


FIG. 5B

Figure 5. Two simple schemes for single-ended termination of STL 30 low impedance end 12 which leave the rest of the STL 30 unchanged. A) completely balanced, shortest length B) least turns.

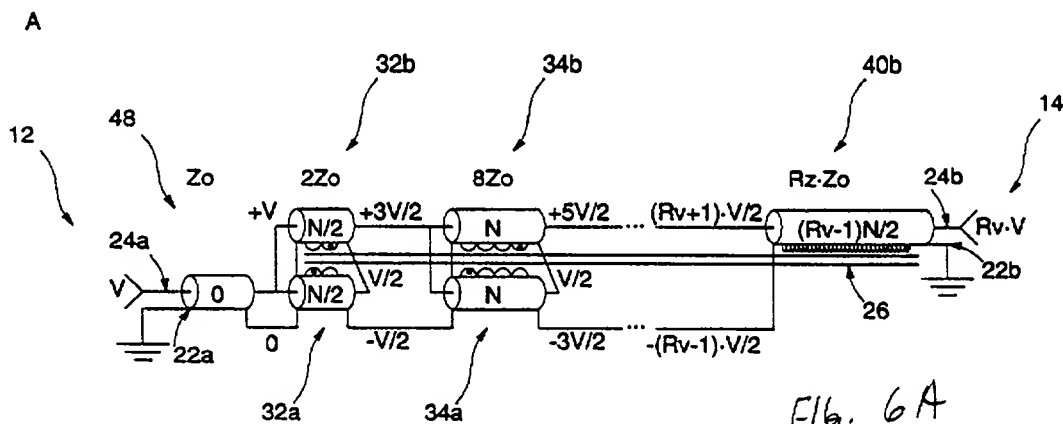


FIG. 6A

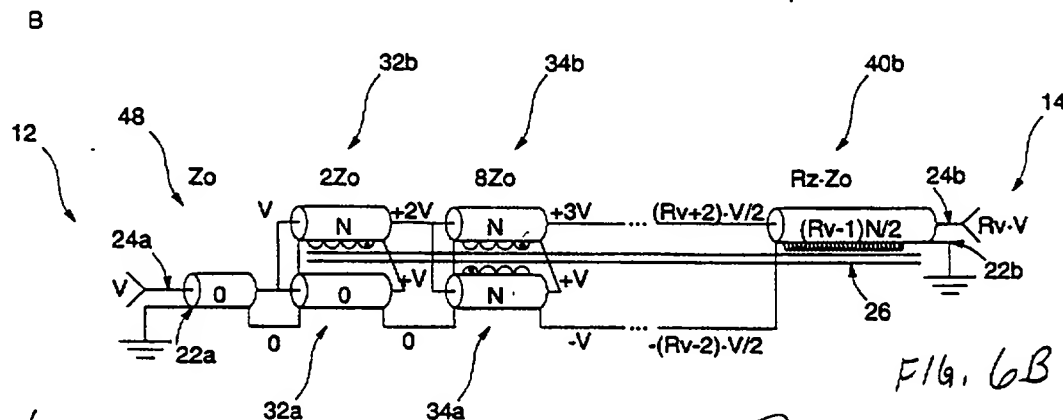


FIG. 6B

Figure 6. Extending the simple termination schemes in figure 5 to "unbalance" the STL 30, and reduce capacitive energy losses and reduce total turns (from cable 40b).

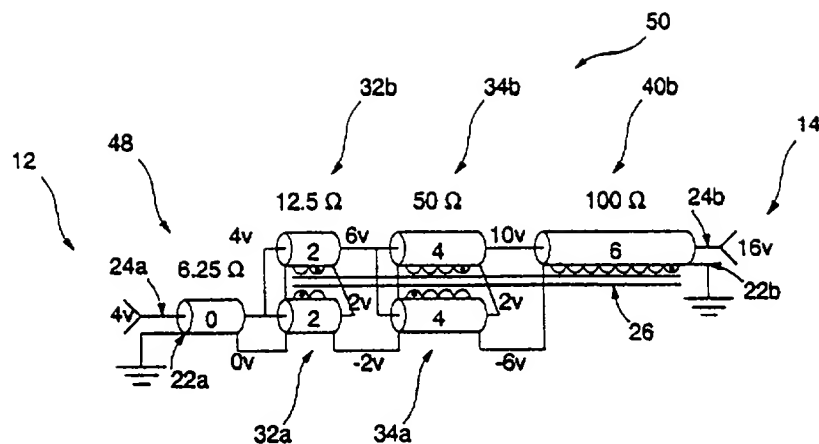


Figure 7. 16:1 non-inverting STLT embodiment of the invention.

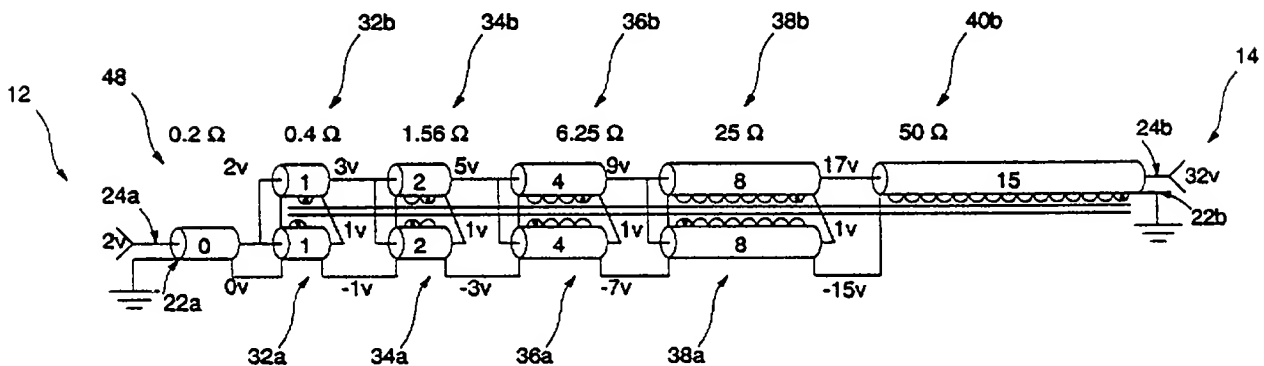


Figure 8. 256:1 non-inverting STLT embodiment of the invention.

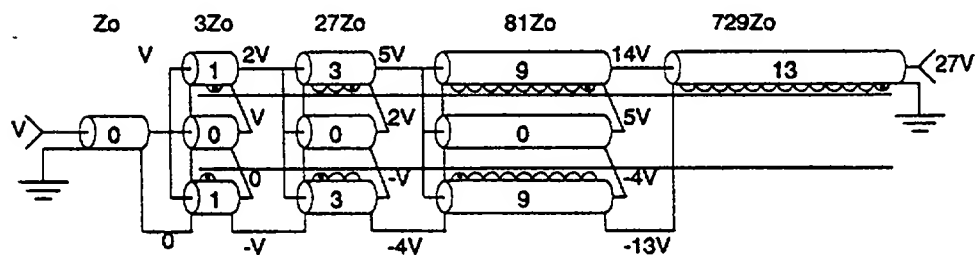


Figure 9. Generalized 729:1 non-inverting STLT embodiment of the invention. Since the middle row of cables do not have to be wound on the core, this behaves exactly like STLT 30.

FIGURE NO. 8 TLT SIGNAL OUTPUT CHARACTERISTICS (DROOPY)  
16:1 TLT Impedance Ratio  $r_0 = 8E-5$

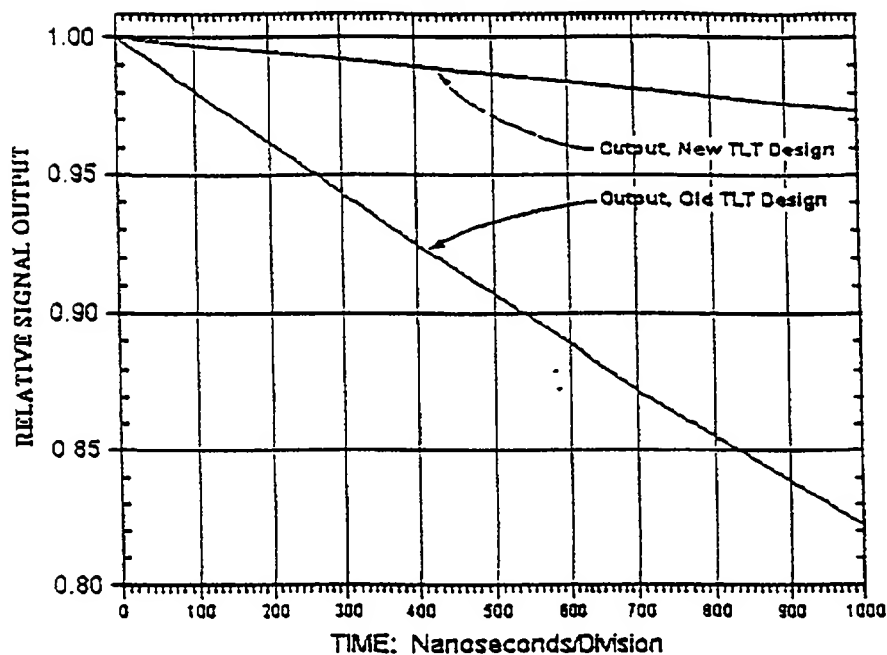


Fig. 10

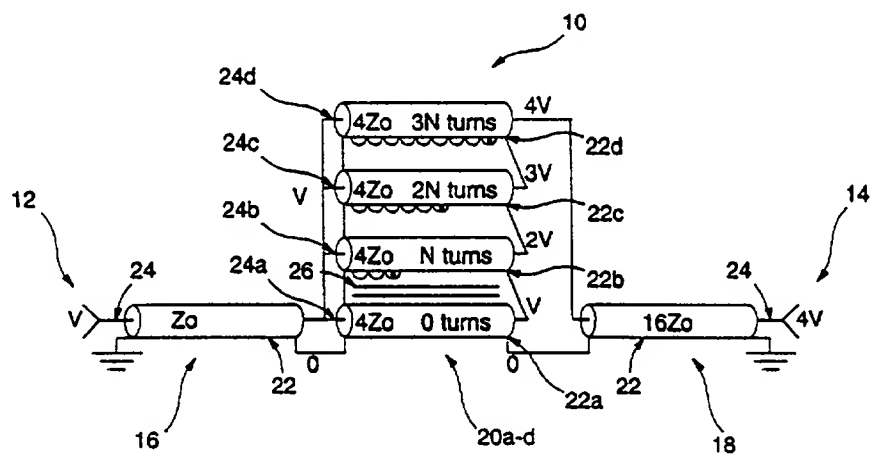


Figure 1. 16:1 TLT of the prior art

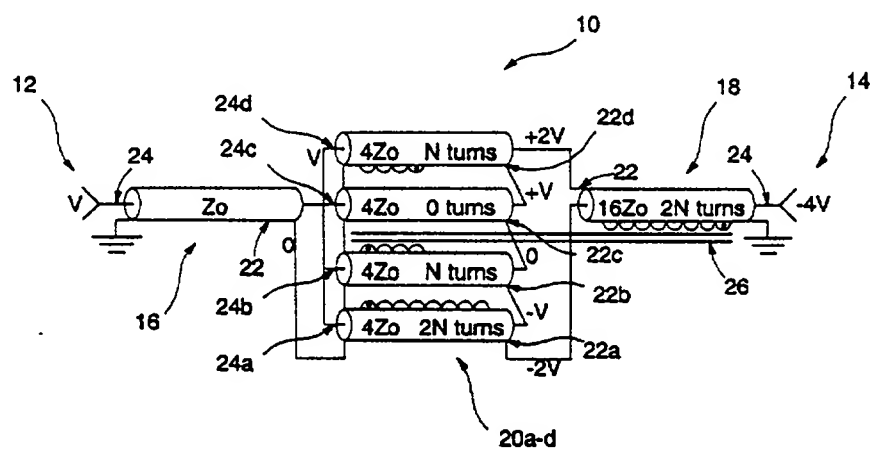


Figure 2. 16:1 Inverting Balanced TLT of prior art.



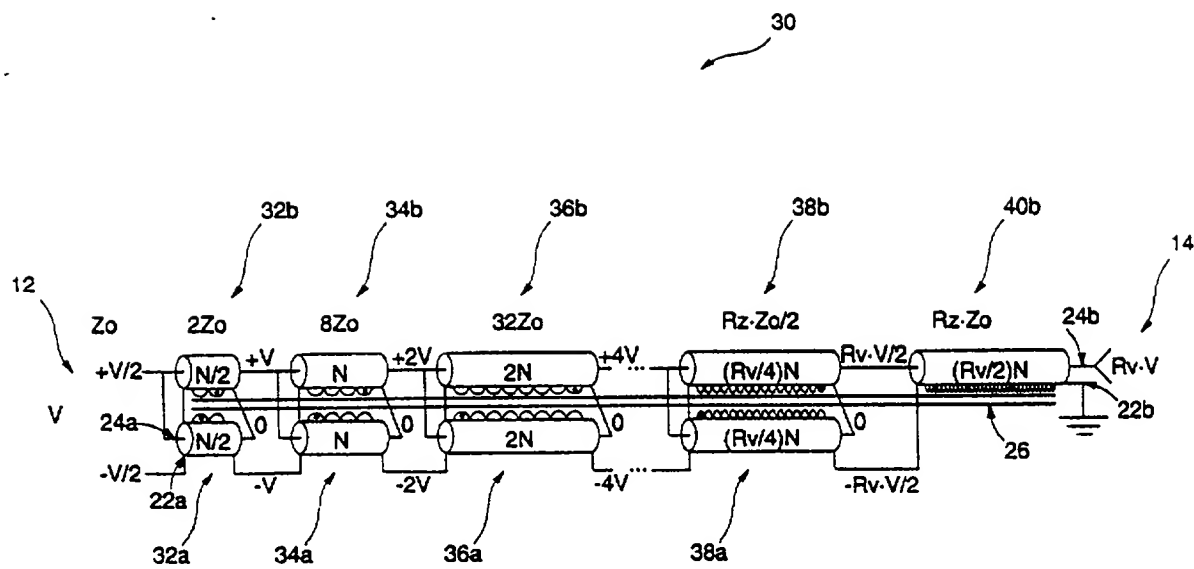


Figure 3.

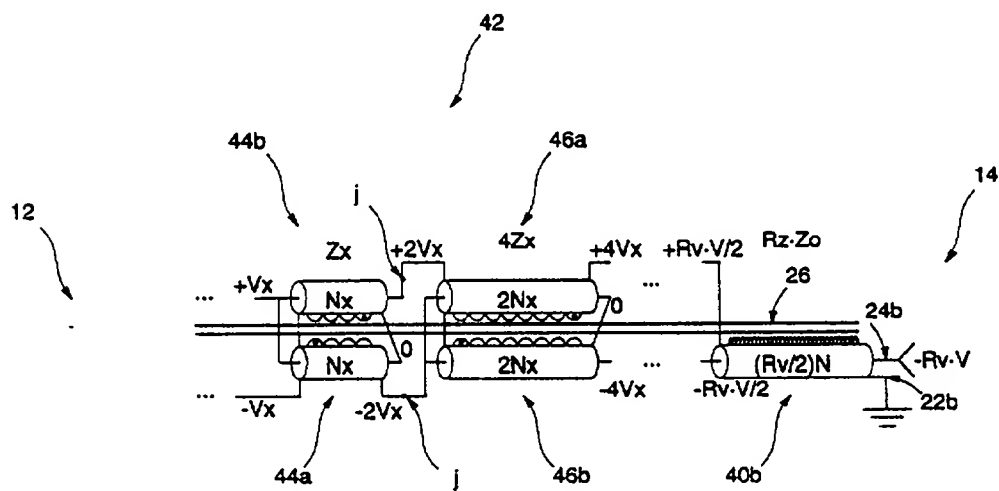
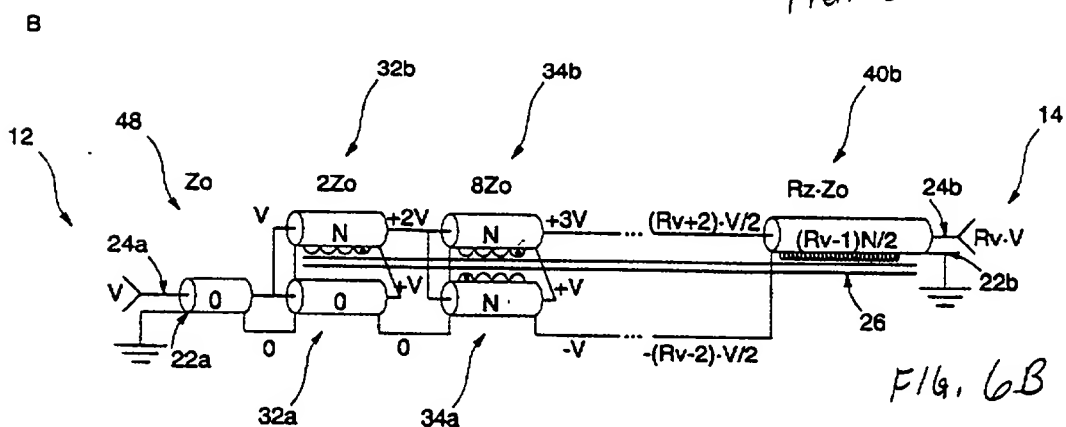
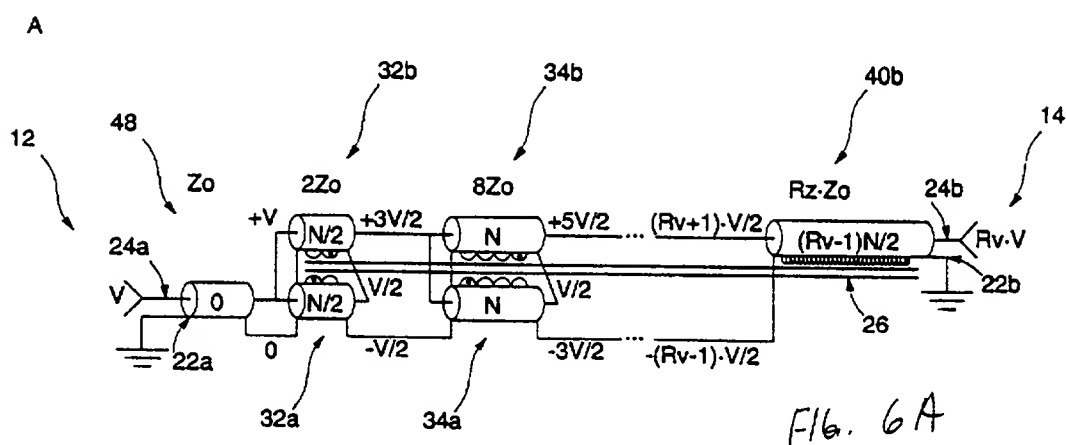
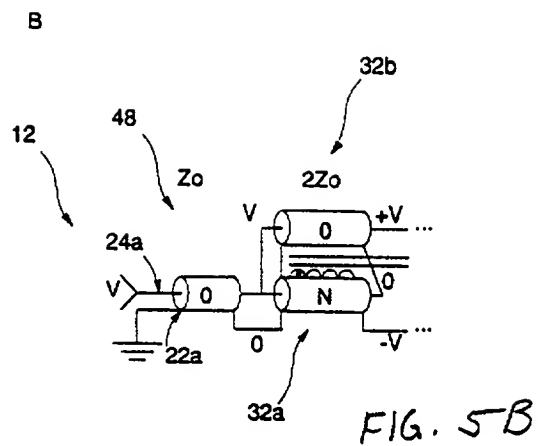
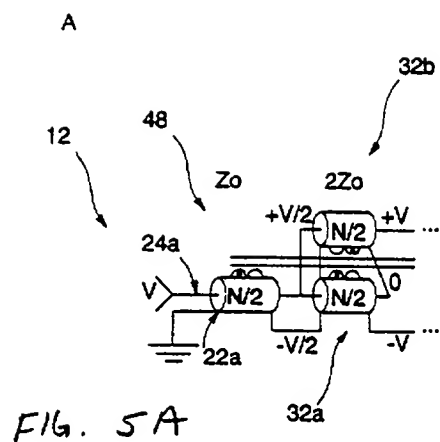
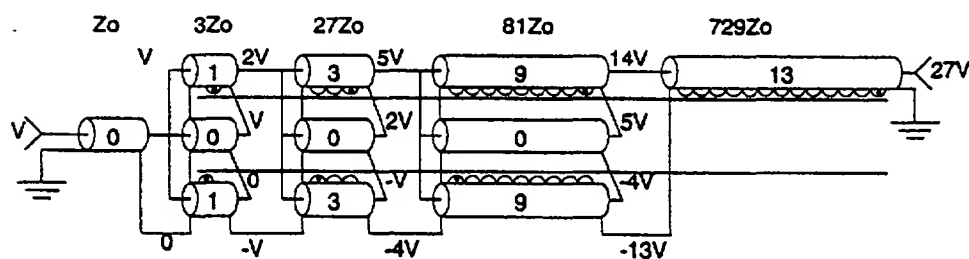
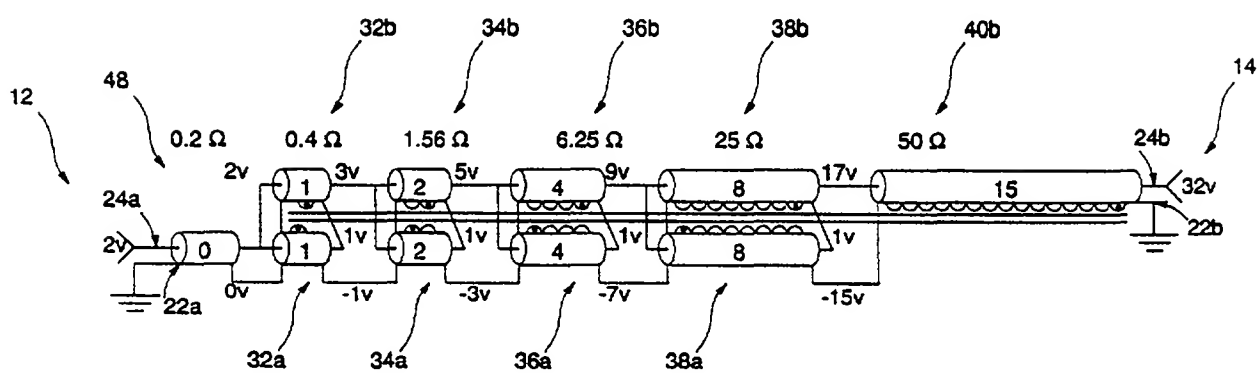
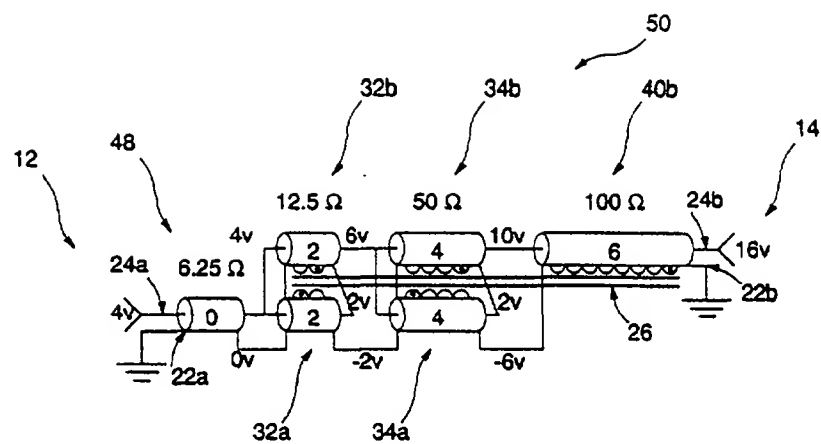


Figure 4.





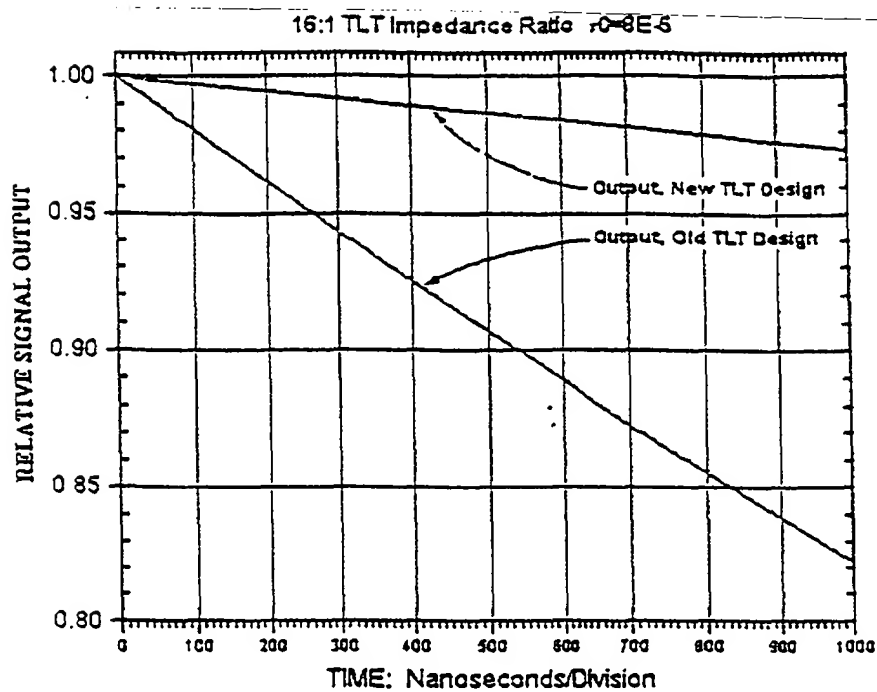


Fig. 10